

REMARKS

Claims 8-21 are pending in the present application. Claims 8-9, 12-14, and 17 are rejected under 35 U.S.C. 102(b), and claims 10-11, 15-16, and 18-21 are rejected under 35 U.S.C. 103(a). Claims 8, 13, and 17 are amended, and claims 48-56 are added. No new matter is added. The rejections are respectfully traversed in light of the following remarks, and reconsideration is requested.

Further, Applicant submits a new Power of Attorney and correspondence change. Please address any future correspondences in the above matter to the new address:

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Rejections under 35 U.S.C. § 102(b)

Claims 8-9, 12-14, and 17 were rejected as being anticipated by U.S. Pat. No. 4,882,008 to Garza et al. The Examiner writes, in part:

Garza et al. disclose . . . an ash/silylation chamber (Figure 1, 106), said ash silylation chamber configured to perform an ashing process (column 5, rows 22-37) and a silylation process (column 5, rows 16-21).

Garza et al. disclose a process chamber that supplies a silylating agent to turn form a silicon dioxide layer over exposed photoresist regions, then provides an etchant gas, such as an oxygen containing gas, to etch the unexposed photoresist regions. (Garza, col. 5, lines 19-31; Figs. 3e and 3f). The plasma is then turned off, and the portions unprotected by the photoresist are etched. (Garza, col. 5, lines 35-41; Fig. 3g). The remaining photoresist is then removed. (Garza, col. 5, lines 43-45; Fig. 3h). Thus, Garza et al. disclose a process chamber in which a silylating agent oxidizes exposed photoresist, an oxygen containing gas etches the

unexposed photoresist, the unprotected portions of the underlying layer are etched, and the remaining photoresist is removed.

In contrast, claim 8, as amended, recites “an ash/silylation chamber, said ash/silylation chamber configured to perform an ashing processing followed by a silylation process on a low-k dielectric layer after a photoresist development and etching of the dielectric layer to repair damage to the dielectric layer from the ashing processing”. Support for the amendment is found in Applicant’s specification at page 8, line 4 to page 9, line 15. Thus, no new matter is added. The chamber recited in claim 8 performs ashing to remove remaining photoresist and then a silylation process to repair any damage from the ashing. This all occurs after the dielectric layer has been etched. Therefore, the ash/silylation chamber of the present invention is distinguishable from what is disclosed in Garza et al.

Thus, claim 8 is patentable over Garza et al. because, inter alia, Garza et al. do not teach or suggest “an ash/silylation chamber, said ash/silylation chamber configured to perform an ashing processing followed by a silylation process on a low-k dielectric layer after a photoresist development and etching of the dielectric layer to repair damage to the dielectric layer from the ashing processing”, as recited in claim 8.

Independent claim 13, as amended, recites “an etch/ash/silylation chamber, said etch/ash/silylation chamber configured to perform an etch process followed by an ashing process followed by a silylation process on a low-k dielectric layer after a photoresist development to repair damage to the dielectric layer from the ashing process”. Thus, for reasons similar to claim 8 above, claim 13 is patentable over Garza et al.

Independent claim 17, as amended, recites “an organic removal/silylation chamber, configured to remove organic sacrificial material from a low-k layer and configured to perform a silylation process after removing the sacrificial material to repair damage to the low-k layer from the sacrificial material removal process”. As with claims 8 and 13, the

chamber recited in claim 17, after etching the underlying layer, removes remaining sacrificial material (e.g., photoresist) and then performs a silylation process to repair damage caused by removal of the sacrificial material. Consequently, claim 17 is patentable over Garza et al. for reasons similar to those of claims 8 and 13 as discussed above.

Claims 9, 12 and 14 depend on claims 8 and 13 and are therefore patentable for at least the same reasons as claims 8 and 13.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. 102(b).

Rejections under 35 U.S.C. § 103(a)

Claims 10-11, 15-16, and 18-21 were rejected as being unpatentable over Garza et al. in view of U.S. Pat. No. 5,171,939 to Moffat. The Examiner cites Moffat for disclosing a spin-on deposition module. However, Moffat does not remedy the deficiencies of Garza as discussed above with respect to claims 8, 13, and 17.

Since claims 10-11, 15-16, and 18-21 depend on claims 8, 13, and 17, claims 10-11, 15-16, and 18-21 are patentable over the cited references for at least the same reasons as claims 8, 13, and 17.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejections under 35 U.S.C. 103(a).

New Claims

Claims 48-56 are added, support for which is found in Applicant's specification and claims as filed. Thus, no new matter is added. Claims 48-56 depend on claims 8, 13, and 17, and are therefore patentable over the cited references for at least the same reasons as claims 8, 13, and 17.

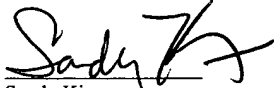
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CONCLUSION

For the foregoing reasons, Applicant believes pending Claims 8-21 and 48-56 are allowable, and a notice of allowance is respectfully requested. If the Examiner has any questions regarding the application, the Examiner is invited to call the undersigned Attorney at (949) 752-7040.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450, on October 20, 2003.


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Respectfully submitted,



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